

AAE Special Seminar

ICME from a Gas Turbine Engine Perspective

Dr. John F. Matlik

Manager

Materials & Process Modeling

Rolls-Royce Corporation

Thursday, March 5, 2015

ARMS 1109

3:00 pm

Abstract

Integrated Computational Materials Engineering (ICME) is becoming a critical enabler for reducing the design/make cycle time and getting complex systems into production more quickly. ICME enables engineers to rapidly explore more effective design and manufacturing solutions for delivering superior products at lower cost, faster but not without challenges. To highlight challenges and progress toward realization of this transformational technology, a survey of recent examples of materials and manufacturing process simulations along with the overarching approach and requirements within ICME to link these simulation capabilities to design and manufacturing methods will be reviewed from a gas turbine engine perspective.

[Integrating Materials and Manufacturing Innovation 2014, 3:13](#)

Bio

Dr. Matlik currently serves as Manager of a Materials & Process Modeling team responsible for delivering advanced manufacturing & material modelling capability in support of new technology programs and cost reduction/avoidance. He is also currently serving as Rolls-Royce Digital Manufacturing & Design Innovation Institute (DMDII) program lead, and is championing efforts to develop & integrate key digital technologies for linking “as built” & “as used” product variability to performance and cost which will deliver significant cost reduction of legacy products as well as “right first time” solutions for new product development. Dr. Matlik is a Purdue Alum 3x over having received his Ph.D., M.S., and B.S. in Aeronautical and Astronautical Engineering in 2004, 2001, and 1999, respectively.
